Dear Friends and Colleagues:

Some proposed approaches to assuring access to health care, and so many other things going on in the “other” Washington, should give many of us in the academic sector pause. Late last summer the Pew Research Center conducted a survey to gauge citizens’ views regarding whether certain institutions have “a positive or negative effect on the way things are going in the country today.” One of the institutions listed was higher education.

Among the more than 1,200 people surveyed, 30% of respondents apparently believe that higher education actually makes our country worse, rather than better. How can this be?

Thomas Edsall provided an extensive commentary on this topic in a recent issue of the New York Times. I will not weigh in on Mr. Edsall’s analysis, but will suggest that those of us in the academy do not do a particularly good job of explicitly, decisively and continuously communicating the value of higher education. I believe that many of us who have devoted our careers to the higher education sector simply take the value of what we do as a given. Who could possibly doubt that we bring value to our communities, our states, and the nation as a whole? Well, apparently, a lot of people.

Taking our small-ish college as an example I can provide just a few of the “value-addeds” associated with higher education:

- We bring more than 700 students or trainees of various designations to our community (mostly Spokane, with a growing number in Yakima). These individuals pay rent, purchase goods and services, and contribute to the local tax base. In short, they are a small but not insignificant segment of the local economy. They also enroll their children in local schools, attend local churches, and participate in local events and organizations, becoming a small but not insignificant portion of the community fabric.
- We produce professionals who are dedicated to improving the health of members of their communities. If ever there was a time in the history of this country when the value of the health professions was obvious, it is today.
- We produce scientists who are dedicated to advancing knowledge of disease onset and progression, and to discover, develop and utilize therapeutic agents to diminish the physical, emotional and economic suffering associated with acute and chronic illnesses.
- We provide an educated workforce that can serve to attract or develop new businesses in the community, further leveraging our economic impact.

There obviously are no easy answers to the question of why higher education is not valued more in the contemporary United States, a country that is widely regarded as “the most innovative, most knowledge driven…nation on earth,” as Richard Florida is quoted in the New York Times article mentioned above. The current dynamic certainly will not simply change of its own accord. It is up to all of us who compose the higher education workforce, as well as those who have been positively
National foundation awards two WSU student pharmacists research grants

Two students in the Doctor of Pharmacy (Pharm.D.) program at Washington State University received Gateway to Research Scholarships in the amount of $5,000 from the American Foundation for Pharmaceutical Education (AFPE).

“There were only 15 award winners nationally, so this is quite an accomplishment,” said Brian Gates, an associate dean at the WSU College of Pharmacy.

Nawsheen Shoaib is a student pharmacist located in Yakima and will be working with Dr. Scott Vanhorn at Yakima Valley Memorial Hospital. Paul Hardy is a student pharmacist located in Spokane and will be working with Dr. Mary Paine in the WSU Department of Pharmaceutical Sciences. The two were notified of their selection this May and their research will run over the next year.
Research Spotlight - AFPE Gateway to Research Scholarship

Name: Paul Hardy

Class of: 2019

Hometown: Portola Valley, CA

Where did you complete your undergrad coursework?
North Idaho College / Gonzaga University

What is the title of the research project you will be working on?
Green Tea as a Novel Precipitant of an Intestinal UGT1A-Mediated Natural Product-Drug Interaction in Healthy Human Volunteers

Where will the research activities be located?
WSU College of Pharmacy Department of Pharmaceutical Sciences, and WSU College of Nursing Clinical Research Unit

Tell me about what you will be doing, and what groups/people will you be working with?
I am working in Dr. Paine’s lab as a study coordinator for an ongoing clinical pharmacokinetic natural product-drug interaction study designed to discern the effects of a widely used green tea product on intestinal UDP-glucuronosyltransferase 1A (UGT1A) activity using raloxifene as the object drug.

I am responsible for managing multiple aspects of the study. Specifically, I oversee subject participation throughout the course of the study, coordinate acquisition of study materials, document all study data, and coordinate study team personnel tasks. I also help prepare quarterly reports for an Independent Monitoring Committee (IMC) responsible for providing unbiased oversight, including participant accrual, progression, and safety.

I work with Dr. Paine and members of her lab including Pharm.D. candidates, post-doctoral researchers, staff, and faculty associated with the lab. I work with Dr. John White (Pharmacotherapy) and Dr. Matthew Layton (College of Medicine) to screen subjects and ensure subject safety measures are maintained. With respect to the IMC, I interact with Drs. Julie Akers (Pharmacotherapy), Joshua Neumiller (Pharmacotherapy), and Kenn Daratha (College of Nursing).

Upon study completion, I will work with Dr. Paine and her group to analyze plasma and urine samples for raloxifene and green tea constituents for subsequent pharmacokinetic analysis; determine whether differences exist between baseline and green tea treatment phases; and work with Dr. Paine to write a manuscript describing the study. I plan to submit an abstract to the American Society for Clinical Pharmacology and Therapeutics this fall, with the goal of presenting this work at the annual meeting in March 2018.

What about this experience are you most looking forward to?
I am looking forward to solidifying some of the basic research principles I’ve learned in the year since joining Dr. Paine’s lab. I will gain not only valuable translational research experience but also develop the critical thinking, manuscript writing, and oral presentation skills I will need as I pursue my interests in pharmaceutical research.

How does this relate to your Doctor of Pharmacy degree?
Pharmacy students have a variety of opportunities to learn and perfect professional pharmacy skills and learn and engage in pharmaceutical research while pursuing their education. I want my career to be balanced between ‘bench’ and ‘bedside’ research. I am interested in a career in clinical and translational research, particularly in the conduct of clinical trials of new drug candidates.

I am currently in the process of applying to the WSU graduate program in pharmaceutical sciences to pursue my research interests further. My hope is to use my doctor of pharmacy degree to facilitate my career ambitions in translational research in academia or pharmaceutical industry, as well as engage in pharmacy practice to give back to my community, particularly to underserved populations.
Get your degree, and while you’re here you could change the world

Students in WSU graduate, professional programs contribute to ground-breaking research

SPOKANE, Wash.—Two researchers at Washington State University will be working on a new project aimed to make the drug vigabatrin safer. This is especially important for babies with certain epilepsies, but also if you are a student in WSU’s Doctor of Pharmacy program or looking to pursue a Ph.D. in pharmaceutical sciences.

“The drug vigabatrin remains the one effective therapeutic for the treatment of infantile spasms, a particularly insidious epileptic disorder,” said Mike Gibson.

Drs. Jean-Baptiste Roullet and K. Michael Gibson study rare metabolic disorders at the WSU College of Pharmacy. Roullet’s work has predominantly focused on rare disorders of cholesterol metabolism, while Gibson has focused on rare disorders of neurotransmitter metabolism, and exclusively the inhibitory neurotransmitter Gamma-Amino Butyric acid (GABA).

“We have strongly overlapping areas of investigation and interest,” said Roullet.

They are both members of the Sterol & Isoprenoid Research (STAIR) Consortium, a national network of researchers dedicated to the investigation of rare or “orphan” genetic disorders.

“In the model of the rare defect of GABA metabolism that we study, we have uncovered new roles for GABA in the control of autophagy and mitophagy, which are essentially recycling processes within the cell that are called upon in times of starvation and/or nutrient deprivation,” said Gibson.

The duo, and other researchers like them, study rare, specific conditions in order to develop targeted therapeutics and to generate translational findings applicable to a larger population.

“In essence, the clinical use of vigabatrin creates a similar situation as we find in our rare genetic diseases of GABA metabolism, namely increased GABA and disrupted autophagy, and this underscores how the study of rare or orphan disorders can have much broader utility,” said Gibson.

Gibson and Roullet just received a $1.58 million grant from the National Eye Institute, part of the National Institutes of Health, and their R01 grant-funded study will run for the next four years at the WSU Health Sciences campus in Spokane.

“Theyir work could lead to novel insights for disorders such as epilepsy, autism and even addiction. It is truly exciting work,” said John White, Jr., chair of the college’s Department of Pharmacotherapy.

Vigabatrin use can induce irreparable constriction of the visual field when taken regularly beyond about one year. Accordingly, the FDA mandates that bimonthly visual field testing be undertaken for any patient receiving vigabatrin.

Such adverse outcomes of drugs are a major interest to both pharmacists and scientists alike. A clinical pharmacist must ensure patients and prescribers weigh the benefits of vigabatrin and the risk of visual toxicity of the drug against the irreparable neurologic damage associated with chronic epilepsy in the central nervous system.
“In this context, mitigating this risk with add-on therapeutics, would be an important advance, and an objective actively pursued in this new four-year grant,” said Roullet.

**How Students Contribute**

Gibson came to the WSU College of Pharmacy in 2012, and Roullet joined WSU in 2015. Combined, the two scientists have over 70 years of research into rare metabolic disorders under their belts. This is important for prospective graduate students who are looking for experienced faculty mentors to guide them through their Ph.D. studies.

And yes, Gibson and Roullet invite graduate students to consider joining them in research focused on orphan disorders.

“Our laboratories, and especially the pioneering work of a previous graduate student and postdoctoral associate, Dr. Kara Vogel, found that drugs which block a specific signaling point in the autophagy pathway could override the effects of GABA on autophagy and mitophagy. The identification that GABA, in increased amounts, has an effect in autophagy and mitophagy is a highly significant and novel finding alone,” said Gibson.

Vogel completed her Ph.D. in pharmaceutical sciences at WSU in 2014. She published her findings pertinent to vigabatrin in the journal *Clinical Pharmacology and Therapeutics*.

“Graduate students working in our laboratories could well have a major impact on pharmacotherapy with regard to epilepsy as well as other imbalances in neurotransmitter and steroid metabolism,” says Gibson.

They are also looking for student pharmacists interested in smaller, more targeted research opportunities, or who are participating in the college’s Research Honors Program.

The Research Honors Program provides an opportunity for Doctor of Pharmacy (Pharm.D.) students to conduct a complete research project with a WSU pharmacy research mentor, in addition to the standard Pharm.D. curriculum.

Student pharmacist participation in research enables them to see firsthand how to advance knowledge, and enjoy the adventure of discovery.

“Having a research background can help when counseling patients who want to know about specific pathways and how their medications work,” said Darrell Jackson, an associate professor and researcher at the University of Montana and past-speaker in the college’s *Preparing For Your Career in Pharmacy* seminar series. He spoke to WSU student pharmacists in 2015 on the importance of exposure to research during pharmacy school.

“We previously had a student pharmacist working on a related project, Tori DeMyer, and a current second-year student pharmacist is working on new agents targeting GABA metabolism, in collaboration with Dr. Senthil Natesan,” said Roullet. Natesan is another pharmacy researcher in Spokane who specializes in computational drug design, pharmacology and medicinal chemistry.

“I cannot think of a more appropriate consideration for the Pharm.D. students than to actively engage in drug discovery, pharmacotherapy and mitigation of drug adverse effects,” says Gibson. “The WSU College of Pharmacy giving consideration to rare diseases within the Pharm.D. curriculum means we are taking steps to prepare our future graduates for the challenges of caring for rare disease patients. With over 7,000 rare diseases affecting more than 30 million individuals in the U.S., this will undoubtedly help the WSU pharmacy program retain its innovative leadership role in training the next generation of pharmacists.”

Providing opportunities for graduate and professional students to contribute in impactful ways to ground-breaking research is part of the college’s mission to develop outstanding health care professionals and scientists through collaborative research and scholarship. It is an example of how WSU provides a transformative student experience and prepares practice-ready graduates who will lead tomorrow’s health care solutions.

More information on the WSU College of Pharmacy degree programs and research can be found online at pharmacy.wsu.edu.
APPE block scheduling: positioning for success

Matching with a desired PGY1 residency program following graduation is undoubtedly a competitive process. To provide WSU student pharmacists with a potential “leg up” when applying for residency programs, the experiential services office has implemented an APPE block scheduling program option for our students. The program allows fourth-year students to engage in a longitudinal experience within a single hospital or health system. The program has been in place for several years now and involves sequentially scheduling a series of rotations within a single hospital or health system.

Integration leads to deeper engagement
Block scheduling provides students with an opportunity to fully integrate into the workflow of a facility or health system. This allows students to engage in longitudinal projects and initiatives within the facility to build their skills and resume to a level that would be more difficult to achieve in a single six-week APPE experience. We find our preceptors and rotation sites appreciate this model because students require less orientation and training over time, and can potentially provide added value services to the rotation site as they progress through their scheduled block rotations.

A more authentic professional experience
Second, the opportunities to network and establish relationships with pharmacy leadership, residency directors and current residents is invaluable to helping students progress through the application and interview process as well as providing additional insight on what to expect if they successfully match with a facility or health system.

The APPE block scheduling program requires a third-year student pharmacist to apply for APPE block scheduling with a participating hospital or health system. Each student is expected to submit an application and participate in an interview process with preceptors from the site(s) where they wish to complete an APPE block schedule. Ultimately, the site selects the student(s) that participate in APPE block scheduling at their facility. This process not only helps ensure a good “fit” between students and preceptors, but also provides the student pharmacist with valuable experience applying and interviewing for a position.

To date, the program has been well received by student pharmacists and preceptors alike. Experiential services looks forward to continuing to pursue APPE block scheduling opportunities to meet the needs of our student pharmacists and practice sites.
Dear Alums, Colleagues and Friends of Pharmacy,

Our Doctor of Pharmacy curriculum has a longstanding tradition of preparing leaders in the profession of pharmacy. And as administrators and faculty at the college, it is only fitting that we emulate these ideals that we take such care to impart on our students.

This is important because we all need to contribute to the advancement of the profession, whether it’s through caring for patients in new and different ways, or teaching students through transformative and innovative methods. One way we have recently demonstrated our leadership for the profession is through our pharmacy faculty who presented at AACP. As we share our experiences in curriculum innovation, assessment, and teaching and learning excellence, we are building a community of likeminded academic programs that is essential to the cultivation of transformation and innovation within pharmacy education.

Another example of how we strive to develop outstanding health care professionals through collaborative clinical educations is with our affiliated residency workshop. This event runs annually during the summer and allows us to connect with our colleagues at Fred Meyer and other companies that have residency programs affiliated with WSU.

As Dean Pollack says often, as professionals we need to continue to tell the story of the value we bring to our patients and the health care team. And once again, the college needs to emulate these ideals by telling the story of exactly how the college is contributing to advancing, promoting and protecting human health. This is one of the reasons why I am looking forward to a special event we have planned in Yakima in just a few short weeks.

In 2015, we finalized the agreement with the Pacific Northwest University of Health Sciences (PNWU) to offer our Pharm.D. program in Yakima. The goal of this strategic initiative is to prepare graduates to care for patients in new and different ways to match the evolving health care landscape, ultimately expanding the availability of health services to underserved populations in rural settings. This year marks the beginning of our third cohort in Yakima.

On August 18 we will host a reception with PNWU to celebrate our partnership—which has made our Pharm.D. program there so successful—in order to publicly acknowledge PNWU for their support and to inform the Yakima health care community about our partnership and programs.

Together, WSU and PNWU are challenging the status quo to develop practice-ready graduates who will lead tomorrow’s health care solutions. If you are in the area, I hope you can join us to celebrate and help us tell the story of the many ways we are striving to prepare the pharmacists and physicians of the future.

With Cougar Pride,

Linda Garrelts MacLean, BPharm, RPh
Vice Dean of External Relations
Clinical Professor
Shelby Denney, class of 2017, received a 2017 WSU Spokane Chancellor’s Award. The Chancellor’s Awards recognize students for their significant leadership and academic contributions to the campus and community. Read more »

Did you know that all the drug monographs published in Wolters Kluwers’ The Formulary Monograph Service since 1989 have been created by our Drug Information Center? Read more »

Loan Lam, class of 2019, overcame childhood leukemia and found a passion for health care along the way. Generosity from scholarship donors have made her dreams of becoming a pharmacist a reality. Read more »

ALUMNI UPDATES

• Thank you to everyone who joined us for our pre-game reception before Coug Day at the Mariners! View event photos »

• John Oftebro, class of 1965, and Dianne White, class of 1970, attended the Coug Culinary Trip this summer! During this trip they were able to enjoy food, history, culture and of, course meeting more loyal Cougs including WSU President Kirk Schulz. View photo »

• Glen Schumock, class of 1987, caught up with us at one of the WSU-presented sessions at AACP this year. Thank you Glen for the Go Cougs!

• We recently learned that alum Mike Strickland, class of 1977, passed away in March and Steve Tomlinson, class of 1978, passed away in June. Our condolences to both families.

Want to be listed in our alumni updates? Send us your career information or let us know what you’ve been up to! gocougs@pharmacy.wsu.edu

FACULTY SCHOLARSHIP

Publications

• Pharmaceutical Sciences Research Associate Anil Singh and Pharmaceutical Sciences Associate Professor Salah-uddin Ahmed co-authored with two others, “Molecular insights into the differences in anti-inflammatory activities of green tea catechins on IL-1β signaling in rheumatoid arthritis synovial fibroblasts,” published in the journal Toxicology and Applied Pharmacology issued on August 15, 2017. Read abstract »

• Pharmaceutical Sciences Associate Research Professor Zuping Xia, Pharmaceutical Sciences Associate Research Professor Gang Chen, Pharmaceutical Sciences Professor and Chair Philip Lazarus, and one other published, “In vitro metabolism of exemestane by hepatic cytochrome P450s: impact of nonsynonymous polymorphisms on formation of the active metabolite 17β-dihydroexemestane,” in the open-access journal Pharmacology Research & Perspectives in April 2017. Read abstract »

• Zuping Xia, Gang Chen, Philip Lazarus, and one co-author published, “Exemestane potency is unchanged by common nonsynonymous polymorphisms in CYP19A1: results of a novel anti-aromatase activity assay examining
exemestane and its derivatives,” in the journal Pharmacology Research & Perspectives in April 2017. Read abstract »

• Pharmaceutical Sciences Visiting Scientist (Lazarus lab) Shaman Luo, Gang Chen, Zuping Xia, Philip Lazarus, and three co-authors published, “Role of the UGT2B17 deletion in exemestane pharmacogenetics,” in The Pharmacogenomics Journal in May 2017. Read abstract »

• Pharmaceutical Sciences Assistant Professor Zhenjia Wang with one co-author published the peer-review article, “Cell membrane-derived nanoparticles: emerging clinical opportunities for targeted drug delivery,” in the international, peer-reviewed journal Nanomedicine. Read abstract »

• Pharmaceutical Sciences Professor and Associate Dean for Faculty and Student Development Kathryn E. Meier and one co-author published, “Free fatty acid receptor (FFAR) agonists inhibit proliferation of human ovarian cancer cells,” in the peer-reviewed journal Prostaglandins, Leukotrienes & Essential Fatty Acids, the official journal of the International Society for the Study of Fatty Acids and Lipids, in June 2017. Read abstract »

Presentations

• Pharmacotherapy Clinical Professor and Assistant Dean for Assessment and Accreditation Brenda S. Bray, Pharmacotherapy Clinical Associate Professor Megan Willson, Pharmacotherapy Clinical Associate Professor Lisa J. Woodard, and one other presented the special session, “Death over dinner—beginning the conversation about the end of life,” at the AACP Annual Meeting on July 17, 2017, in Nashville.

• Pharmacotherapy Clinical Assistant Professor (Yakima) Damianne Brand-Eubanks and Pharmaceutical Sciences Clinical Assistant Professor Connie Remsberg presented the special session, “Flipping pharmacy: a course example of how Washington State University is altering distance education,” at the AACP Annual Meeting on July 17, 2017, in Nashville.

• Pharmaceutical Sciences Associate Research Professor and U.S. Transuranium and Uranium Registries (USTUR) Director Sergei Tolmachev presented the podium presentation, “U.S. Transuranium and Uranium Registries: 50 years of research relevant to new biomarker,” at the 62nd Annual Meeting of the Health Physics Society in Raleigh, North Carolina, on July 9-13, 2017. Read abstract »

• USTUR Assistant Research Professor George Tabatadze, USTUR Assistant Research Professor Maia Avtandilashvili and Sergei Tolmachev presented the podium presentation, “Plutonium in tissues of occupationally exposed individuals,” at the 62nd Annual Meeting of the Health Physics Society in Raleigh, North Carolina, on July 9-13, 2017. Read abstract »

• Maia Avtandilashvili, Sergei Tolmachev and one other presented, “Enhancement of plutonium excretion following late Ca-EDTA/DTAP treatment,” at the 62nd Annual Meeting of the Health Physics Society in Raleigh, North Carolina, on July 9-13, 2017. Read abstract »


• Christy Watson, Gang Chen, Philip Lazarus and one other co-authored the abstract, “Nicotine metabolism by the flavin monooxygenase (FMO) family of enzymes and its main variants. The role of flavin monooxygenases (FMO) family of enzymes in nicotine metabolism,” presented at the ASPET Annual Meeting at Experimental Biology 2017 in Chicago, Illinois, April 22-26.


• Christy Watson, Gang Chen, Philip Lazarus and one other co-authored the abstract, “Nicotine metabolism by the flavin monooxygenase (FMO) family of enzymes and its main variants. The role of Flavin monooxygenases (FMO) family of enzymes in nicotine metabolism,” presented at the Drug Metabolism Gordon Research Conference in
• Pharmaceutical Sciences Associate Professor Mary Paine presented, “Identification of natural products as precipitants of clinical drug interactions: challenges and opportunities,” at the Safety Consideration in Clinical Drug Metabolism and Transport symposium as part of the Drug Metabolism Gordon Research Conference in Holderness, New Hampshire, July 9-14.


Service

• Philip Lazarus was appointed a member of the Editorial Advisory Board for the ASPET journal Molecular Pharmacology beginning in January 2017.

• Pharmaceutical Sciences Clinical Associate Professor Susan A. Marsh served as a grant reviewer for the NHLBI Biorepository: Scientific Opportunities for Exploratory Research (R21) special emphasis panel in Washington, D.C., on July 7, 2017.

• Susan Marsh was appointed to a three-year term as chair of the Women in Physiology Committee for the American Physiological Society from January 1, 2018, through December 31, 2020.

Awards

• Kimberly McKeirnan received an honorable mention by the AACP Lab SIG’s first Laboratory Innovation and Teaching Excellence (LITE) Awards for her work on TST training.

STUDENT ACHIEVEMENT

Doctor of Philosophy (Ph.D.) students

• Soumyadeep (Sam) Sarkar, pharmaceutical sciences (Gaddameedhi lab), was selected for a 2017 Student and New Investigator Travel Award from the Environmental Mutagenesis and Genomics Society (EMGS). The merit-based award includes $760 and recognition at the EMGS Annual Meeting on September 12 in Raleigh, North Carolina.

• Sabrina Fechtner, pharmaceutical sciences (Ahmed lab), with faculty co-authors Anil Singh, Salah-uddin Ahmed, and one other published, “Molecular insights into the differences in anti-inflammatory activities of green tea catechins on IL-1β signaling in rheumatoid arthritis synovial fibroblasts,” in the journal Toxicology and Applied Pharmacology in August 2017. Read abstract »

• Amity Peterson, pharmaceutical sciences (Lazarus lab), with faculty co-authors Zuping Xia, Gang Chen and Philip Lazarus published, “In vitro metabolism of exemestane by hepatic cytochrome P450s: impact of nonsynonymous polymorphisms on formation of the active metabolite 17β-dihydroexemestane,” in the open-access journal Pharmacology Research & Perspectives in April 2017. Read abstract »

• Amity Peterson with faculty co-authors Zuping Xia, Gang Chen and Philip Lazarus published, “Exemestane potency is unchanged by common nonsynonymous polymorphisms in CYP19A1: results of a novel anti-aromatase activity assay examining exemestane and its derivatives,” in the journal Pharmacology Research & Perspectives in April 2017. Read abstract »

• Sara Dumit, pharmaceutical sciences (Tolmachev lab), with faculty co-presenters Maia Avtandilashvili and Sergei Tolmachev presented, “Enhancement of plutonium excretion following late Ca-EDTA/DTAP treatment,” at the 62nd Annual Meeting of the Health Physics Society in Raleigh, North Carolina, on July 9-13, 2017. Read abstract »

• Shannon Kozlovich, pharmaceutical sciences (Lazarus lab), received an ASPET travel award to present the abstract, “Menthol exhibits stereospecific inhibition of phase II UGT enzymes,” at the ASPET Annual Meeting at Experimental Biology 2017 in Chicago, Illinois, April 22-26. Abstract faculty co-authors: Gang Chen and Philip Lazarus.

• Anna G. Vergara, pharmaceutical sciences (Lazarus lab), received an ASPET travel award to present the abstract, “Characterization of UDP glycosyltransferase 3A variants in tobacco carcinogen metabolism,” presented at the ASPET Annual Meeting at Experimental Biology 2017 in Chicago, Illinois, April 22-26. Abstract faculty co-authors: Christy Watson and Philip Lazarus.

• Yadira Perez-Paramo, pharmaceutical sciences (Lazarus lab), received an ASPET travel award to present the abstract, “Nicotine metabolism by the flavin monooxygenase (FMO) family of enzymes and its main variants. The role of flavin

• **Aimee K. Sutliff**, pharmaceutical sciences (Lazarus lab), received an ASPET travel award to present the abstract, “The UDP-glucuronosyltransferase (UGT) 2A1308Arg variant isoform: its role in modulating wild-type UGT2A1 activity and its association with lung cancer risk,” at the ASPET Annual Meeting at Experimental Biology 2017 in Chicago, Illinois, April 22-26. Abstract faculty co-authors: Joe Ashmore, Philip Lazarus and one other.

• **Anna Vergara** received a Gordon Conference full travel award to present the abstract, “Characterization of UDP glycosyltransferase 3A variants in tobacco carcinogen metabolism,” at the Drug Metabolism Gordon Research Conference in Holderness, New Hampshire, July 9-14. Abstract faculty co-authors: Christy Watson and Philip Lazarus.

• **Yadira Perez-Paramo** received a Gordon Conference full travel award to present the abstract, “Nicotine metabolism by the flavin monooxygenase (FMO) family of enzymes and its main variants. The role of flavin monooxygenases (FMO) family of enzymes in nicotine metabolism,” at the Drug Metabolism Gordon Research Conference in Holderness, New Hampshire, July 9-14. Abstract faculty co-authors: Christy Watson, Gang Chen and Philip Lazarus.

**Doctor of Pharmacy (Pharm.D.) students**

• **Tory Knebel, Brian Rupp, Josephine Rupp, and Thomas Vanderholm** placed in the top 10 nationally for the 2017 NCPA Business Plan Competition. Read more »

• **Tory Knebel** was selected to serve a two-year term on the NCPA Student Leadership Council.

• WSU student pharmacists, with faculty mentors **Damianne Brand-Eubanks** and Pharmacotherapy Clinical Assistant Professor **Anne Kim**, volunteered at a health fair hosted by Virginia Mason Memorial Hospital in Yakima on July 29. The group ran an osteoporosis screening booth and screened about 85 patients.

• **Svetlana Yurkin** with faculty co-author **Zhenjia Wang** published, “Cell membrane-derived nanoparticles: emerging clinical opportunities for targeted drug delivery,” in Nanomedicine. Read more »